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A further decrease, however, could not be viewed with equanimity. The disquieting element in the situation is the fact that rates on commercial paper have not shown the normal seasonal rise. Low rates encourage credit inflation.

The rate on call loans is the only rate for short time loans in New York for which the actual weekly figures show a change between August 1 and October 10. Choice double name 60-90 day commercial paper is quoted at  $5\frac{1}{4}$  to  $5\frac{1}{2}$  per cent, good single name 4-6 months commercial paper at  $5\frac{1}{2}$  per cent, bankers' acceptances eligible for rediscount at 4 to  $4\frac{3}{4}$  per cent and ineligible bills at  $4\frac{1}{2}$  to  $5\frac{1}{4}$  per cent. The rates of the New York Federal Reserve Bank have not been changed from 4 per cent for discounts secured by government war obligations, collateral notes, or acceptances with 15 days' maturity, and  $4\frac{1}{4}$  to  $4\frac{3}{4}$  for similar paper with 16 to 90 days' maturity. The average call rate in both August and September was about  $5\frac{1}{2}$  per cent. Usually call rates show a decided stiffening tendency between August and December, the seasonal movement responding to the demands of industry rather than those of speculation. In other words, speculators can usually obtain additional funds only by outbidding industry.

There is another element in the money market which may prove to be a source of disturbance. Foreign demands for loans may cause either extreme stringency or further credit inflation. It is probable that even now the market is feeling the strain of foreign loans.

We have said nothing here about labor troubles, such as the threatened strike of the coal miners and the possibility of a railroad strike. Such developments may interfere seriously with business, decreasing volume of output and increasing prices, but they are obviously things of which economic statistics can hardly supply a forecast. Our belief is that a way will be found to carry on the nation's work, for which four years of world war have created such an acute need.

The charts presented in this SUPPLEMENT are based upon the statistical analysis presented in THE REVIEW OF ECONOMIC STATISTICS for January and April. There it was shown that fluctuations in the series of the speculative group systematically preceded the fluctuations in the commodity price and production group by six to ten months. It may be well to state the reasons for the relationship.

Prices of stocks in the securities markets are an index, in the long run, of the judgment of purchasers of those stocks concerning the future of industry. *Increasing* stock prices indicate confidence on the part of buyers that profits will increase or will be sustained at a high level. High profits in a given industry result, of course, from a good volume of business at high selling prices and comparatively low costs of the commodities produced. Assuming fixed costs, high profits result from high prices of the commodities produced. High stock prices result from the capitalization (i. e., discounting

anticipated profits) of the high profits which are expected to result from high commodity prices and a large volume of production. In other words, purchasers of stocks *attempt* to forecast commodity prices and production.

Those who purchase stocks advisedly must make a forecast of profits, that is of the differential between wages and the prices of materials used, on the one hand, and the prices of the commodities produced, on the other hand. The expected differential will be maintained only if selling prices increase earlier or more violently than costs. A defection of profits results when costs mount faster than selling prices. *Decreasing* stock prices may mean, not lack of confidence in the maintenance of the level of the prices of commodities produced but rather the belief that costs are overtaking selling prices. The prices of commodities in general may continue high or even increase for some time after a defection in profits has been recognized and become a matter of record in decreasing stock prices. The defection of profits is followed by the effort to raise funds to meet the demands of creditors by sales of commodities at price recessions. This explains the lag in the movement of commodity prices compared with stock prices.

The close correspondence of the curve for the speculative group with that for the price and production group (with a lag of the latter) indicates that the judgment of the stock market is, on the whole, reliable. The judgment referred to is not the judgment of uninformed traders but rather the judgment of insiders and their associates who have a knowledge of the demand for the commodities produced by their respective concerns. The information upon which the directors of great enterprises act is the resultant of reports made by salesmen, estimates of stock on hand, analyses of production costs, contact with the leaders of allied business houses, and the like. In the speculative group of series we have, then, an index of confidence or lack of confidence in the maintenance of profits and of the level of commodity prices.

Judgment of the business future should not be based upon stock market data alone. There are other guides to the future. A parallel between the present and the Napoleonic period, for instance, has been drawn by some. Is there a parallel? What was the financial experience following the Napoleonic wars? These questions are considered in the forthcoming issue of THE REVIEW OF ECONOMIC STATISTICS. In the same issue two other topics of current interest will be treated, the effects of the French indemnity of 1871 and an analysis of the exports of the United States. Summaries of these three articles are given on pp. 10-11 of this SUPPLEMENT.

## II. THE THREE GROUPS OF SERIES

### GROUP A

Chart II shows the monthly fluctuations, since November 1918, of the following series of business

statistics, corrected for seasonal variation and secular trend:

- New York bank clearings.
- Price of twenty industrial stocks.
- Shares traded on the New York Stock Exchange.
- The value of building permits in twenty leading cities.
- The yield of ten railroad bonds (reversed).

During the period 1903-14 these five series moved in general together, reflecting speculative activity and forecasting the movement of Group B.

Not quite the same can be said of the period since November 1918. *The price of twenty railroad stocks*, also included in this group for the pre-war period, is temporarily excluded; owing to government control of railroads and the special questions now agitating the railroad world, it does not appear at present to contribute significantly to the index of general business conditions. *The price of ten railroad bonds*, although shown on the chart, is obviously out of line with the companion series, owing partly to considerations affecting railroad stocks, and largely also to the influence of government war bond issues and the great foreign demand for American capital. The price of bonds has dropped to a new low level, continuing a rather steady decline that began last December. Finally, at the signing of the armistice, the *value of building permits* stood at a much lower level than the remaining series, as a result of government restrictions in war time. The drop in September is due entirely to a decrease in the figures for New York City from the unusual figure of \$45,000,000 in August to \$19,000,000 in September. The other cities in the group show an increase of 20 per cent.

The other three series, *New York clearings*, *shares traded*, and *price of industrials*, agree in showing persistent stability from November to February and a strong upward sweep culminating in July. Although shares traded fell slightly in September the other series show a recovery. It is the average of these corrected series which is taken at present as a fair indication of speculative activity since November 1918, and which, as shown by the shaded line (A) on the chart, continued its upward movement in July, receded in August, and recovered in September.

The recession in August appears to have been a temporary hesitation in an upward movement. Interpreted on the basis of the pre-war sequence any recession in the speculative group must persist for some months before we may conclude that there will follow a like recession in commodity prices. Consequently, we conclude that a period of strong commodity prices and continued industrial activity may be expected.

#### GROUP B

Charts III and IV show the monthly fluctuations, from November 1918, of the following seven commodity price and production series, corrected for seasonal variation and secular trend:

- Bank clearings outside New York City.
- Bradstreet's* index of commodity prices.
- Bureau of Labor index of wholesale prices.
- Business failures (reversed).
- Merchandise imports of the United States.
- Production of pig iron.
- Unfilled orders of the United States Steel Corporation.

CORRECTED ITEMS OF VARIOUS SERIES OF BUSINESS STATISTICS\*  
(CYCLES)

|                 | GROUP A            |                            |               |                  |                             | GROUP B           |                     |                        |                                |         |                        |                             | GROUP C                          |                                   |                     |
|-----------------|--------------------|----------------------------|---------------|------------------|-----------------------------|-------------------|---------------------|------------------------|--------------------------------|---------|------------------------|-----------------------------|----------------------------------|-----------------------------------|---------------------|
|                 | New York clearings | Price of industrial stocks | Shares traded | Building permits | Yield on ten railroad bonds | Outside clearings | Bradstreet's prices | Bureau of Labor prices | Business failures (Bradstreet) | Imports | Production of pig iron | Unfilled orders U. S. S. C. | Rate on four-to-six months paper | Rate on sixty-to-ninety day paper | Dividend payments ‡ |
| <b>1918</b>     |                    |                            |               |                  |                             |                   |                     |                        |                                |         |                        |                             |                                  |                                   |                     |
| November .....  | +1.0               | + .7                       | + .1          | -3.8             | - .9                        | + .7              | +2.0                | +2.4                   | -4.2                           | +1.1    | + .8                   | + .5                        | +1.0                             | +1.1                              | +1.0                |
| December .....  | +1.1               | + .5                       | - .3          | -3.7             | - .3                        | + .7              | +2.2                | +2.6                   | -5.0                           | - .7    | + .9                   | + .2                        | +1.0                             | + .7                              | +1.1                |
| <b>1919</b>     |                    |                            |               |                  |                             |                   |                     |                        |                                |         |                        |                             |                                  |                                   |                     |
| January .....   | +1.1               | + .4                       | - .3          | -3.0             | + .2                        | + .9              | +1.4                | +1.8                   | -6.0                           | - .8    | + .7                   | - .1                        | + .9                             | + .9                              | +1.5                |
| February .....  | +1.1               | + .5                       | - .3          | -2.4             | +1.0                        | + .3              | + .1                | + .6                   | -4.5                           | + .3    | + .3                   | - .4                        | +1.1                             | +1.3                              | +1.0                |
| March .....     | +1.4               | + .9                       | +1.0          | -2.1             | +1.3                        | + .7              | - .6                | +1.4                   | -4.6                           | + .4    | - .1                   | - .7                        | +1.0                             | +1.3                              | +1.0                |
| April .....     | +1.7               | +1.3                       | +2.1          | - .8             | +1.5                        | + .6              | - .5                | +1.8                   | -4.6                           | +1.4    | -1.0                   | -1.0                        | +1.3                             | +1.4                              | + .4                |
| May .....       | +2.3               | +2.0                       | +2.9          | + .8             | +1.1                        | +1.9              | - .5                | +2.6                   | -4.6                           | +3.8    | -1.7                   | -1.2                        | +1.3                             | +1.6                              | - .1                |
| June .....      | +2.8               | +2.4                       | +2.7          | +2.2             | +1.0                        | +2.0              | + .8                | +2.6                   | -4.5                           | +2.6    | -1.4                   | -1.0                        | +1.6                             | +1.9                              | -1.0                |
| July .....      | +3.6               | +2.9                       | +2.9          | +2.3             | +1.6                        | +2.8              | +2.0                | +5.0                   | -4.8                           | +4.6    | - .8                   | - .7                        | +1.3                             | +1.4                              | .0                  |
| August .....    | +2.9               | +2.3                       | +1.5          | +4.4             | +2.6                        | +3.2              | +3.7                |                        | -4.3                           | +3.0†   | - .3                   | - .4                        | + .9                             | + .8                              | + .3                |
| September ..... | +3.0               | +2.8                       | +1.4          | +3.2†            | +3.0                        | +3.5              | +2.9                |                        | -3.9                           |         | - .8                   | - .4                        | + .3†                            | + .4†                             | +1.1                |
| October .....   |                    |                            |               |                  |                             |                   | +3.0                |                        |                                |         |                        |                             |                                  |                                   |                     |

\* These figures, which are plotted on Charts II-V, represent the trend of the series when the original data shown on the preceding pages have been corrected for seasonal variation and secular trend, as described in the April REVIEW, p. 139, and the MONTHLY SUPPLEMENT for July, pp. 7-10.

† Preliminary figure.

‡ In the September SUPPLEMENT a change was made in the method of presentation of this series. The corrected items are now computed from the *three months moving averages, centered*, of the actual items.

These series fluctuated roughly together during the pre-war period, reflecting industrial activity, and lagging behind Group A.

For reasons incident to the readjustment from war to peace conditions, the last four of these series seem tem-

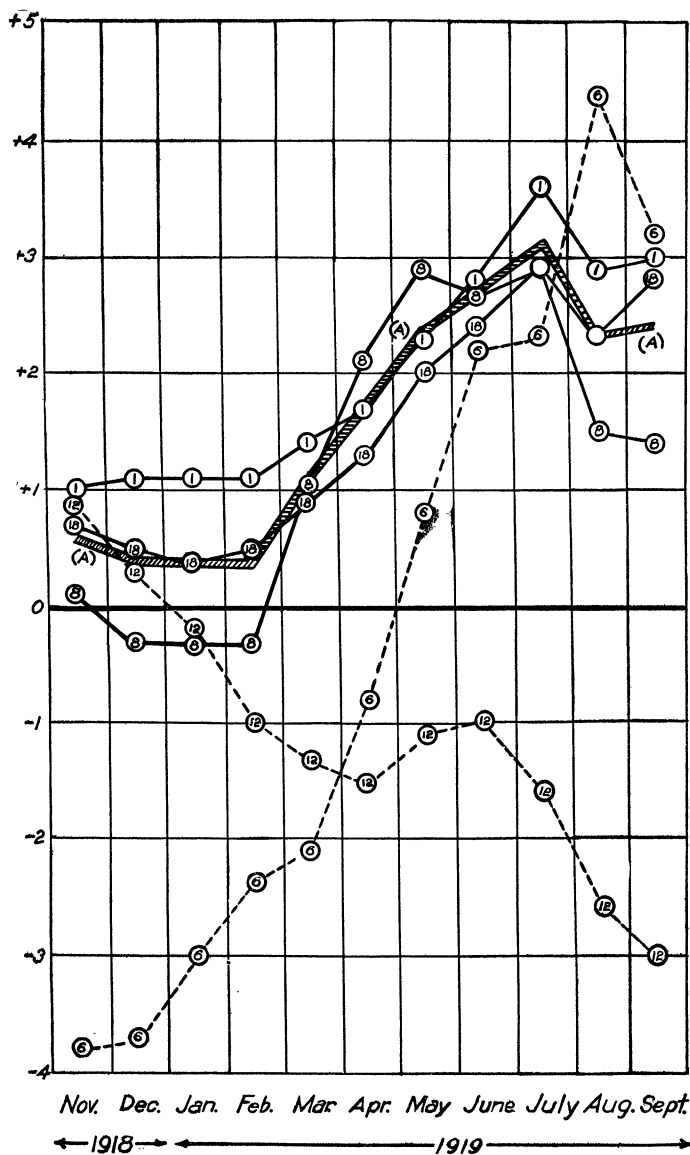


CHART II. — CORRECTED SERIES OF THE SPECULATIVE GROUP (A).  
(1) New York Clearings, (6) Building Permits, (8) Shares Traded, (12) Price of 10 Railroad Bonds (yield reversed), (18) Price of Industrials. The heavy shaded line represents the average of series 1, 6, 8, and 12.

porarily unreliable as indices of general business conditions for the period since November 1918. These are, accordingly, plotted separately on Chart IV. *Business failures* (reversed on the chart) have been on an exceedingly low level ever since 1917, and on this level their fluctuations have not their customary significance. A considerable further drop of the curve would not be cause for uneasiness. The status of *merchandise imports* has been greatly affected by government trade restrictions and their recent relaxations, the change in price level, and the new position of America in international finance. In the past imports have fluctuated with business prosperity and depression, while exports have not been an index of business conditions. *Pig-iron production* and *unfilled orders of the United States Steel Corporation*, which were much swollen by war requirements, have been especially affected by readjustments to peace

conditions. Pig-iron production, as expected, fell off in September because of the strike, while unfilled orders

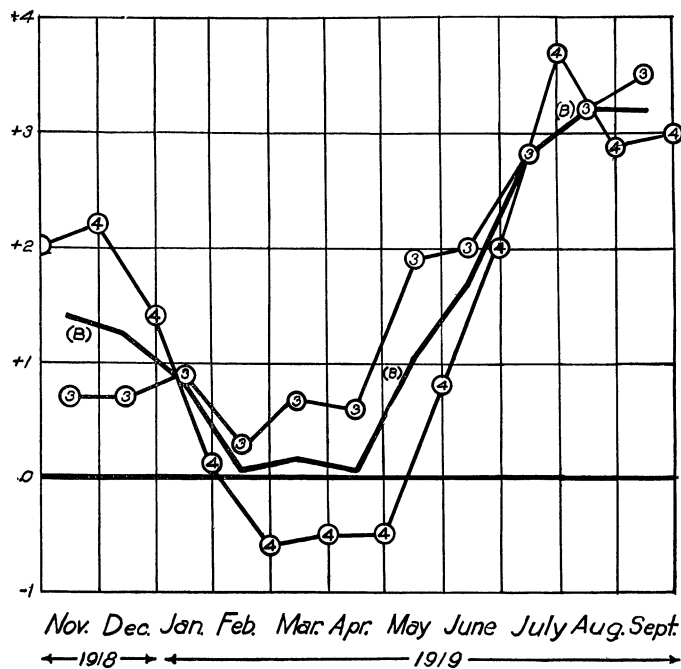


CHART III. — CORRECTED SERIES (ENTERING THE AVERAGE) OF THE COMMODITY PRICE AND PRODUCTION GROUP (B).  
(3) Outside Clearings, (4) Bradstreet's Prices (pertains to first day of month).  
The heavy line represents the average of series 3 and 4, the data for series 4 having been adjusted by taking the means of pairs of consecutive items of the corrected series.

increased. Upon the settlement of the strike these series may be expected to resume their usual status in Group B.

The two *commodity price indices* and *bank clearings outside New York City* show a reasonably close conformity for the whole period, and for the time are regarded as reasonably representing the trend of industrial activity. In August outside clearings and *Bradstreet's* prices moved in opposite directions. In September, however, they again moved together. These two are shown, with their average, in Chart III. From this average the Bureau of Labor price index (see Chart IV) is excluded merely because its late publication does not permit its use for the last two months.

#### GROUP C

The banking and financial group employed in the pre-war period included the following five monthly series:

- Loans of New York City Clearing House banks.
- Deposits of New York City Clearing House banks.
- Rate of interest on four-to-six months commercial paper.
- Rate of interest on sixty-to-ninety day commercial paper.
- Dividend payments by industrial corporations.

These series tended to fluctuate together, and their fluctuations lagged behind those of the industrial group.

Since the armistice the *loans and deposits* series have tended moderately upward. *Discount rates*, after a drop in November and December from the high point reached earlier in 1918, tended moderately upward from January

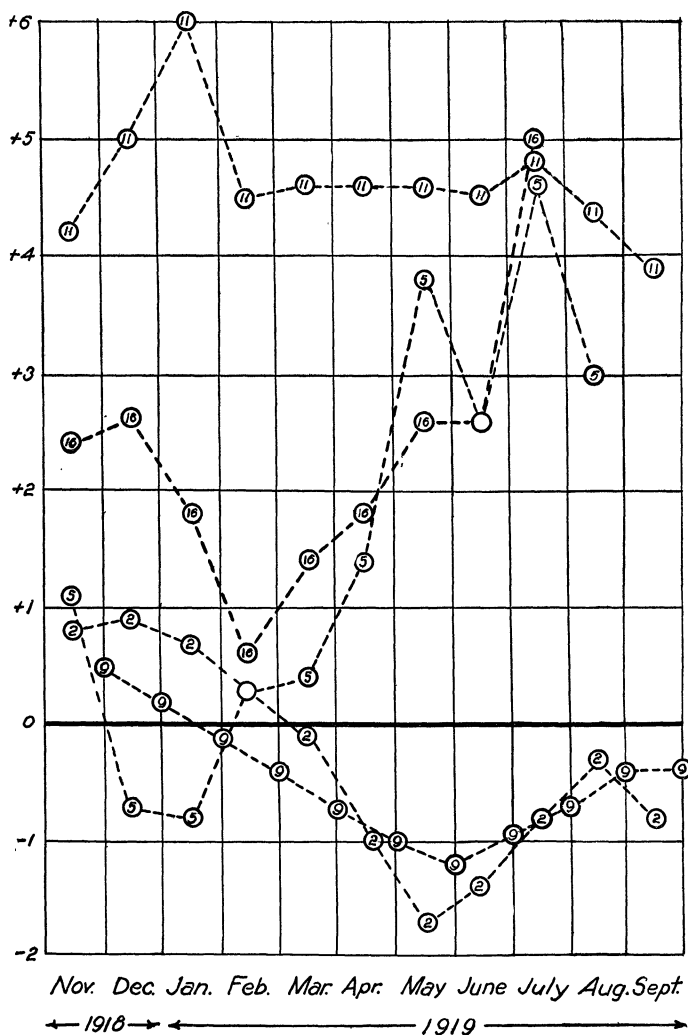


CHART IV. — CORRECTED SERIES (NOT ENTERING THE AVERAGE) OF THE COMMODITY PRICE AND PRODUCTION GROUP (B).

(2) Production of Pig Iron, (5) Imports, (9) Unfilled Orders U. S. Steel Corporation (pertains to last day of month), (11) Bradstreet's Business Failures, reversed, (16) Bureau of Labor Prices.

to June. Since June the corrected rates have tended steadily downward. The seasonal tendencies exhibited by discount rates in pre-war days, but largely absent during the war, have not yet reappeared under the federal reserve system. If they prove to be seriously

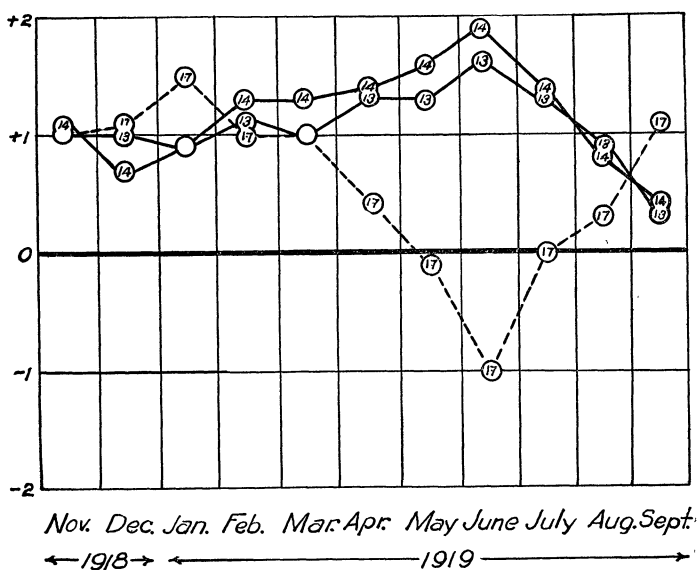


CHART V. — CORRECTED SERIES OF THE FINANCIAL GROUP (C).

(13) Rate on 4-6 Months Paper, (14) Rate on 60-90 Day Paper, (17) Dividend Payments, three months averages.

modified from their pre-war tendencies, a change in the corrections of these series may be called for. It is the

absence of the usual autumn rise that has resulted in a descending curve since June.

The amount of dividend payments by industrial corporations usually does not increase until a period of prosperity is well advanced. Likewise discount rates usually advance only after continued industrial activity. High dividend payments and high discount rates usually come at the climax of prosperity. At the present time, however, discount rates are constant and dividend payments rising. This unusual situation is an aftermath of the war. If discount rates respond to the demand for credit, which usually increases with business activity, we may expect the series ultimately to agree in their fluctuations (Chart V).

### III. THE INDIVIDUAL SERIES<sup>1</sup>

#### (A) THE SPECULATIVE GROUP

New York bank clearings for September were one-half per cent above those for August. Usually the figure for September is slightly under that for August, so that the seasonal variation this year is normal. Monthly clearings increased steadily since February to a record figure of \$21,880,000,000 in July, but in August receded to \$19,530,000,000. Usually October clearings are 20 per cent above those for September, and November clearings are 5 or 6 per cent under those for October.

The average price of twenty industrial stocks for September was \$108.20 compared with \$103.20 for August. There was a strong upward movement between February and July, when the average increased from \$82.40 to the record figure of \$109.70. The upward movement since February was preceded by a more gradual upward swing from the low point of \$70.20 touched in December 1917. The recession in August 1919 was temporary. As yet there is no convincing sign that present or higher levels will not be maintained for some months. This index is based on the following stocks, which are fairly representative of industrials:

|                           |                      |
|---------------------------|----------------------|
| American Beet Sugar.      | General Electric.    |
| American Can.             | Goodrich.            |
| American Car and Foundry. | Rep. Iron and Steel. |
| American Locomotive.      | Studebaker.          |
| American Smelting.        | Texas Co.            |
| American Sugar.           | U. S. Rubber.        |
| American Tel. and Tel.    | U. S. Steel.         |
| Anaconda.                 | Utah Copper.         |
| Baldwin Locomotive.       | Westinghouse.        |
| Central Leather.          | Western Union.       |

The number of shares sold on the New York Stock Exchange was 24,140,000 in September, a slight decrease compared with August. Usually, the volume of sales in September is under August, although the variation is not systematic. The September sales were the

<sup>1</sup> Monthly figures from November 1918 are given in the accompanying table. For monthly data 1903-18, see THE REVIEW OF ECONOMIC STATISTICS, at pages shown in the table at the end of this section.